

REMARKS/ARGUMENTS

Upon entry of this Amendment, which cancels Claims 25, 40 and 43-46; amends Claims 22, 24, 26-39, 41 and 42; and adds new Claims 47-52, Claims 22-24, 26-39, 41, 42 and 47-52 remain pending in the present application.

In the March 19, 2004 Office Action, the declaration was objected to for allegedly not complying with 37 C.F.R. § 1.67(a). The specification was objected to for not including the patent number of the patent application from which the present patent application claims priority. Claims 22, 30, 34, 36 and 37 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,796,306 to Tsumura (hereinafter referred to as "Tsumura"). Claims 22, 29 and 34 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,069,525 to Sevic et al. (hereinafter referred to as "Sevic et al."). Claims 23, 35 and 43-46 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sevic et al. in view of U.S. Patent No. 6,201,452 to Dent et al. (hereinafter referred to as "Dent et al."). Finally, Claims 24-28, 31-33 and 38-42 were objected to as being dependent on rejected base claims (i.e. independent Claims 22 and 34), but were indicated as being allowable if rewritten in independent form including all of the limitations of the respective base claims and any intervening claims. Applicant respectfully requests reconsideration of the claims in view of the above amendments and the comments below.

Objection to the Declaration

In the March 19, 2004 Office Action, the declaration was objected to for allegedly not complying with 37 C.F.R. § 1.67(a), which sets for the rules for submitting a supplemental oath or declaration. In particular, in the Office Action it is asserted that the declaration is defective because it does not identify the parent application no. 09/637,269. For the following reasons Applicant respectfully disagrees that a supplementary declaration need be submitted.

37 C.F.R. § 1.63(d)(1) states that:

A newly executed oath or declaration is not required under § 1.51(b)(2) and § 1.53(f) in a continuation or divisional application, provided that:

- (i) The prior nonprovisional application contained an oath or declaration as prescribed by paragraphs (a) through (c) of this section;
- (ii) The continuation or divisional application was filed by all or by fewer than all of the inventors named in the prior application;
- (iii) The specification and drawings filed in the continuation or divisional application contain no matter that would have been new matter in the prior application; and
- (iv) A copy of the executed oath or declaration filed in the prior application, showing the signature or an indication thereon that it was signed, is submitted for the continuation or divisional application.

There is nothing in this rule that requires the parent application number to be enumerated in a supplemental declaration when a continuation application is filed. Further, M.P.E.P. § 602.05(a), which sets forth the declaration requirements in continuation and divisional patent applications, explains that:

A continuation or divisional application filed under 37 CFR 1.53(b) (other than a continuation-in-part (CIP)) may be filed with a copy of the oath or declaration from the prior nonprovisional application. See 37 CFR 1.63(d)(1)(iv).

Indeed, the second paragraph of M.P.E.P. § 602.05(a) implies that no such enumeration is necessary:

A copy of an oath or declaration from a prior application may be submitted with a continuation or divisional application *even if* the oath or declaration identifies the application number of the prior application.

M.P.E.P. § 602.05(a) (emphasis supplied).

37 C.F.R. § 1.67(a), the rule cited in the Office Action to support the assertion that the declaration is defective, does not require that the parent application number be enumerated in a supplemental declaration. That rule merely states that a supplemental declaration may be required if the declaration submitted does not comply with the requirements of 37 C.F.R. § 1.63. Because the declaration submitted in this application complies with all of the requirements of 37 C.F.R. § 1.63, Applicant respectfully believes that a supplemental declaration is not necessary. Applicant requests, therefore, that the objection to the declaration be withdrawn.

Objection to the Specification

In the Office Action, the specification was objected to for not including the patent number of the patent application from which the present patent application claims priority. In response, Applicant has amended the specification to indicate that the parent application number (application no. 09/637,269) corresponds to now issued U.S. Patent No. 6,636,112.

35 U.S.C. § 102(b) Claim Rejections – Claims 22, 30, 34, 36 and 37

On page 3 of the Office Action, Claims 22, 30, 34, 36 and 37 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Tsumura. For the following reasons Applicant respectfully disagrees.

Tsumura discloses a variable output amplifier apparatus. An input signal is distributed by a distributing unit as first signals to a plurality of variable gain units having different gain and maximum output power. Second signals generated from the variable gain units are combined by a combining unit to generate an output signal. A plurality of power supply control units applies power to each of the variable gain units, respectively. The variable gain units and the power supply control units are controlled by a control unit. When one of the variable gain units and one of the power supply control units are activated, the corresponding power supply is rapidly turned ON. When they are deactivated, the corresponding power supply is slowly turned OFF.

By contrast, independent Claim 22 of the present application claims an RF amplifier apparatus having a “plurality of amplifier modules, each amplifier module comprising a nonlinear switch-mode RF amplifier having an RF input configured to receive a common RF input signal, and a power controller having a magnitude control input” ... “wherein said RF input signal drive one or more of said nonlinear switch-mode RF amplifiers between a hard-on state and a hard-off state, without operating said nonlinear switch-mode RF amplifiers in linear operating regions for any appreciable percentage of time.

Tsumura does not teach an RF amplifier apparatus having such characteristics. Indeed, there is no teaching by Tsumura that the variable gain units 2-1, 2-2,...,2-n are nonlinear switch-mode RF amplifiers that are driven between a hard-on state and a hard-off state, without operating in linear operating regions for any appreciable percentage of time. Claim 34, which is also an independent claim, includes similar distinguishing characteristics.

For at least the foregoing reasons Tsumura does not anticipate Claim 22 of the present invention. Applicant respectfully requests, therefore, that the § 102(b) rejections of Claims 22 and 34, as allegedly being anticipated by Tsumura, be withdrawn. Claims 30, 36 and 37 all depend from either independent Claim 22 or independent Claim 34. Accordingly, they depend from what appear to be allowable base claims. Applicant, respectfully requests, therefore, that the § 102(b) rejections of these dependent claims also be withdrawn.

35 U.S.C. § 102(e) Claim Rejections – Claims 22, 29 and 34

On pages 3-4 of the Office Action, Claims 22, 29 and 34 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Sevic et al. For the following reasons Applicant respectfully disagrees.

Sevic et al. disclose a dual-mode amplifier that can operate according to two different standards, e.g., both CDMA and AMPS, which have different linearity requirements. In particular, the Sevic et al. dual-mode amplifier operates in either a “high linearity mode” or a “high efficiency mode”, depending on a mode select signal. In

the high linearity mode the load line of the amplifier (see Figure 2 of Sevic et al.) is optimized for maximum linearity. Sevic et al. explain that this mode is useful for CDMA mode of operation where linearity requirements are more stringent than for AMPS mode. For the “high efficiency” mode, the supply voltage is reduced to a value of $V_c(\min)$, as compared to a supply voltage of $V_c(\max)$ used in the CDMA mode. As shown by the load line 304 in Figure 3 of Sevic et al., the lowering of the supply voltage to $V_c(\min)$ causes the amplifier to become voltage-limited and exhibit saturation for input voltages greater than $2V_c(\min)$. Sevic et al. explain that this results in lower average power dissipation. Nevertheless, with the exceptions when the input voltage is greater than $2V_c(\min)$, the Sevic et al. amplifier operates in a linear fashion, in both the “high linearity” mode and the “high efficiency” mode, for substantially all of the time.

By contrast, independent Claim 22 of the present application claims an RF amplifier apparatus having a “plurality of amplifier modules, each amplifier module comprising a nonlinear switch-mode RF amplifier having an RF input configured to receive a common RF input signal, and a power controller having a magnitude control input” ... “wherein said RF input signal drive one or more of said nonlinear switch-mode RF amplifiers between a hard-on state and a hard-off state, without operating said nonlinear switch-mode RF amplifiers in linear operating regions for any appreciable percentage of time.

Sevic et al. do not teach an RF amplifier apparatus having such characteristics. Indeed, there is no teaching by Sevic et al. that the amplifier stages 104a, 104b, ..., 104n are nonlinear switch-mode RF amplifiers that are driven between a hard-on state and a

hard-off state, without operating in linear operating regions for any appreciable percentage of time. Claim 34, which is also an independent claim, includes similar distinguishing characteristics.

For at least the foregoing reasons Sevic et al. does not anticipate Claim 22 of the present invention. Applicant respectfully requests, therefore, that the § 102(e) rejections of Claims 22 and 34, as allegedly being anticipated by Sevic et al, be withdrawn. Claim 29 depends from independent Claim 22. Accordingly, it depends from what appears to be an allowable base claim. Applicant, respectfully requests, therefore, that the § 102(e) rejection of dependent Claim 29 also be withdrawn.

35 U.S.C. § 103(a) Claim Rejections – Claims 23, 35 and 43-46

On pages 4-5 of the Office Action, Claims 23, 35 and 43-46 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sevic et al. in view of Dent et al. Claims 43-46 have been canceled in this Amendment. Accordingly, the rejections of those claims need not be addressed. For the following reasons, however, Applicant respectfully disagrees with the § 103(a) rejections of Claims 23 and 35.

Claims 23 and 35 depend from independent Claims 22 and 34, respectively. Above it was explained why independent Claims 22 and 34 are believed to be allowable over the cited prior art. These same reasons apply to dependent Claims 23 and 35. Nevertheless, there are additional reasons why the § 103(a) cannot be properly maintained.

M.P.E.P. § 2143.01 directs that:

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Section 2143.01 further directs that:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

As explained in detail below, if the Sevic et al. amplifier were modified by Dent et al., the modification would both: (1) render the Sevic et al. amplifier unsatisfactory for its intended purpose, and (2) change the principle of operation of the Sevic et al. amplifier. Accordingly, Applicant respectfully believes that it is improper to base a § 103(a) rejection on the modification of Sevic et al. by Dent et al.

Dent et al. discloses a modulation system for converting a stream of complex numbers into a modulated radio power signal. The stream of complex numbers is comprised of a real part and an imaginary part. The real part is represented by a first plurality of first digits of decreasing numerical significance, and the imaginary part is represented by a second plurality of second digits of decreasing numerical significance. Respective ones of the first and second digits of like numerical significance are grouped to form a plurality of phase control symbols. A respective phase control symbol is then used to control the phase of an output signal at the radio carrier frequency from a respective one of a plurality of power amplifiers. Each of the power amplifiers provides an output power level that is related to the numerical significance of the first and second

digits that form the associated phase control symbol. The output power levels of the plurality of amplifiers are combined to thereby form the modulated radio power signal.

Column 2, lines 43-45 of Dent et al. suggest that the binarily-weighted amplifiers may be nonlinear switching amplifiers. However, as explained below, such binarily-weighted nonlinear amplifiers cannot be properly used in the Sevic et al. amplifier.

As explained above the Sevic et al. amplifier seeks to attain high linearity in a “high linearity mode” of operation. If the binarily-weighted nonlinear switching amplifiers of Dent et al. were used in lieu of Sevic et al.’s amplifier stages 104a-104n, the modification would not only change the principle of operation of the Sevic et al. amplifier apparatus, such a modification would also render the Sevic et al. amplifier apparatus unsatisfactory for its intended purpose of providing a dual-mode amplifier having a “high linearity mode” of operation. Because M.P.E.P. § 2143.01 does not permit such modifications to be made, Applicant believes that the § 103(a) rejections of Claims 23 and 35 cannot be properly maintained. Applicant respectfully requests, therefore, that the § 103(a) rejections of Claims 23 and 35 be withdrawn.

New Claims – Claims 47-52

New claims 47-52 are believed to be allowable over the cited prior art of record for at least the same or similar reasons as provided above.

Appl. No.: 10/688,444
Amdt. Dated: June 21, 2004
Office Action Dated: March 19, 2004

Docket No. 034942-292

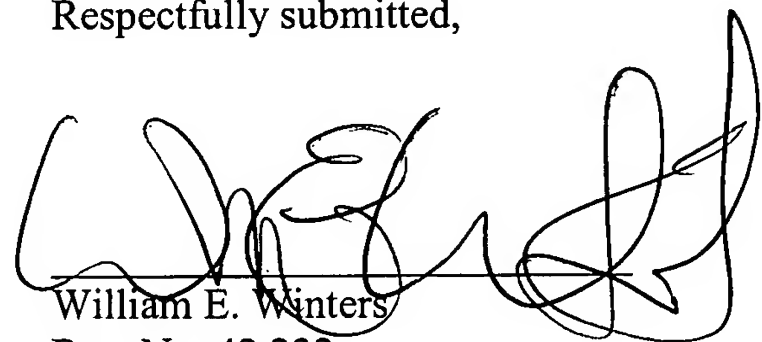
CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 408-282-1857.

Respectfully submitted,

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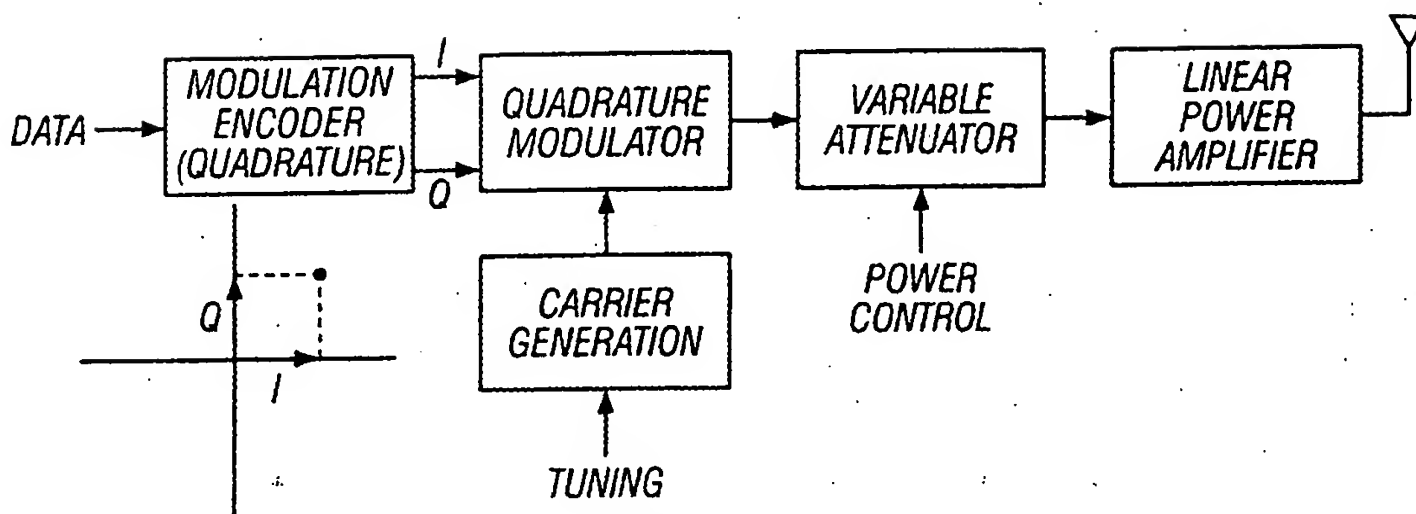


FIG. 6
(Prior Art)

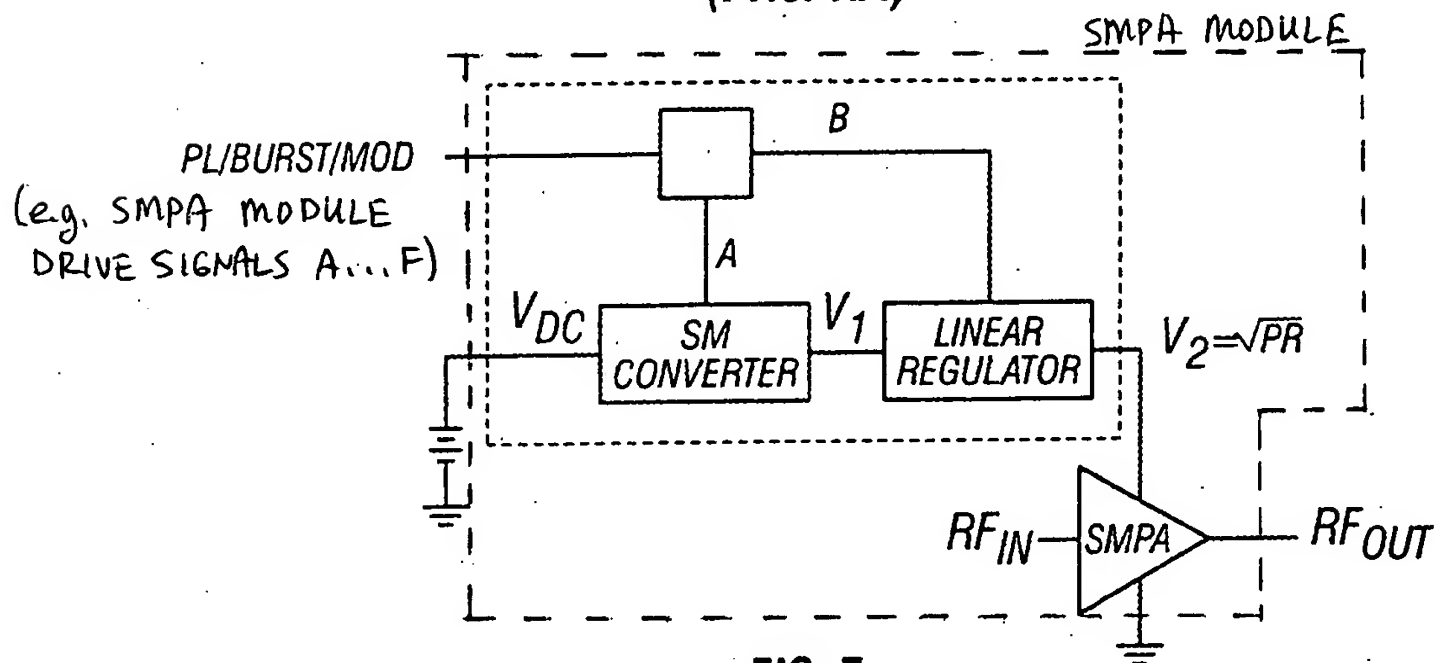


FIG. 7

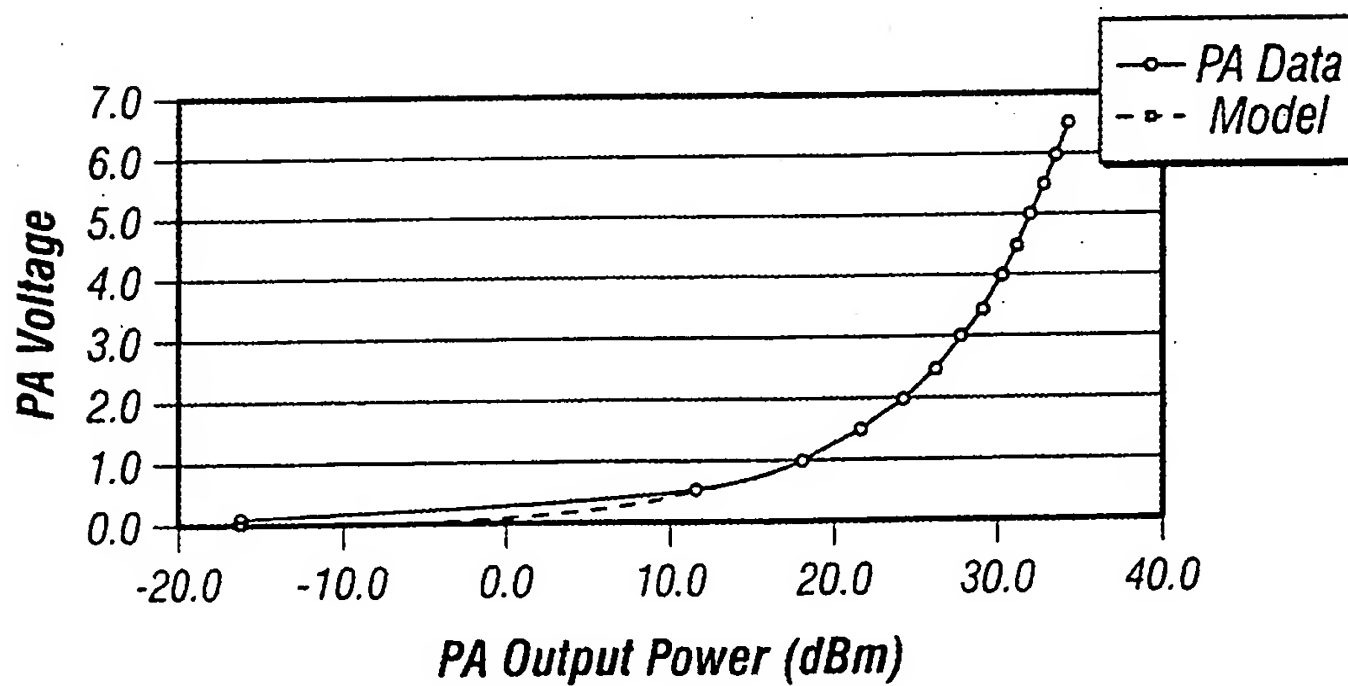
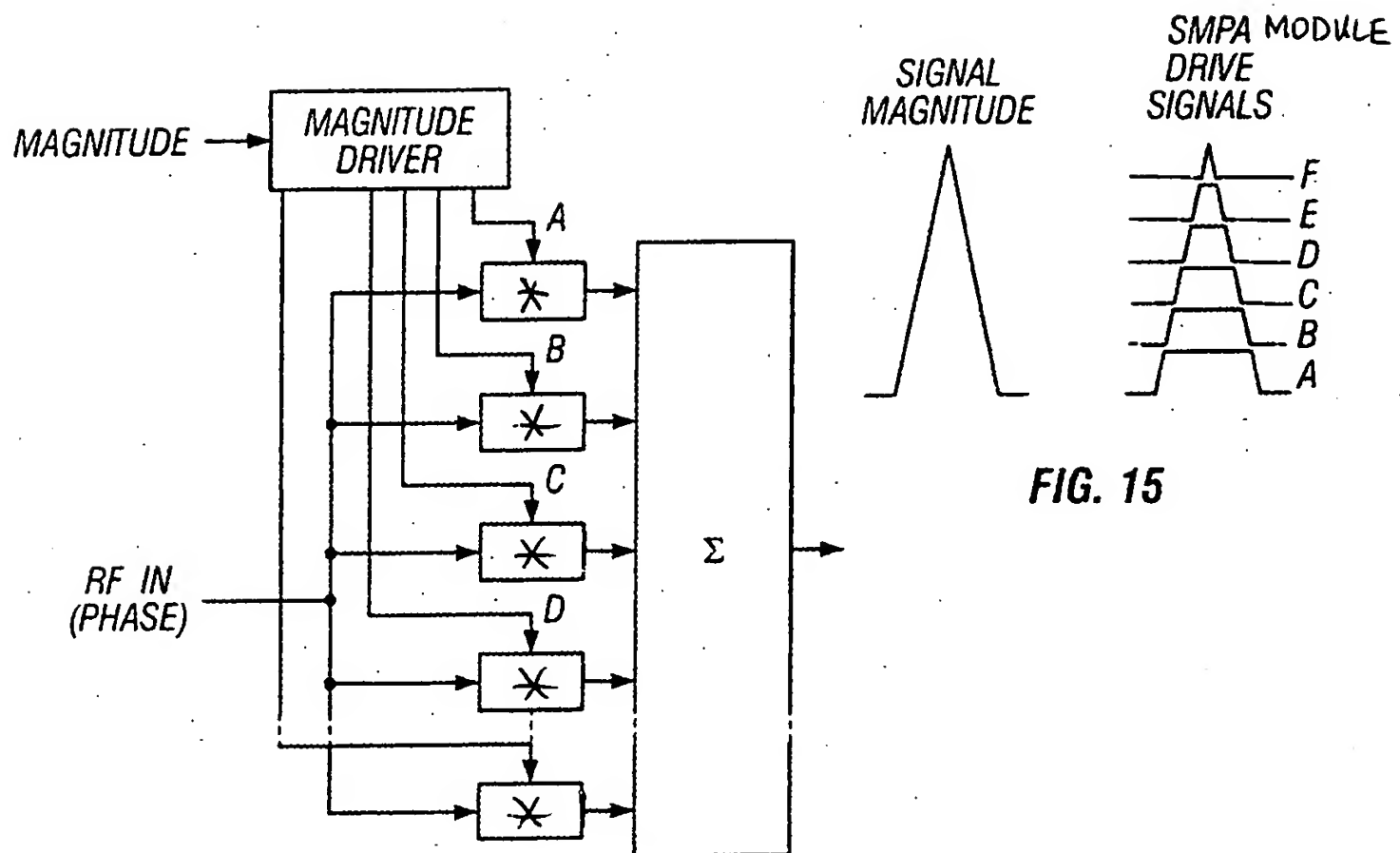


FIG. 8

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* = SMPA MODULE

FIG. 14

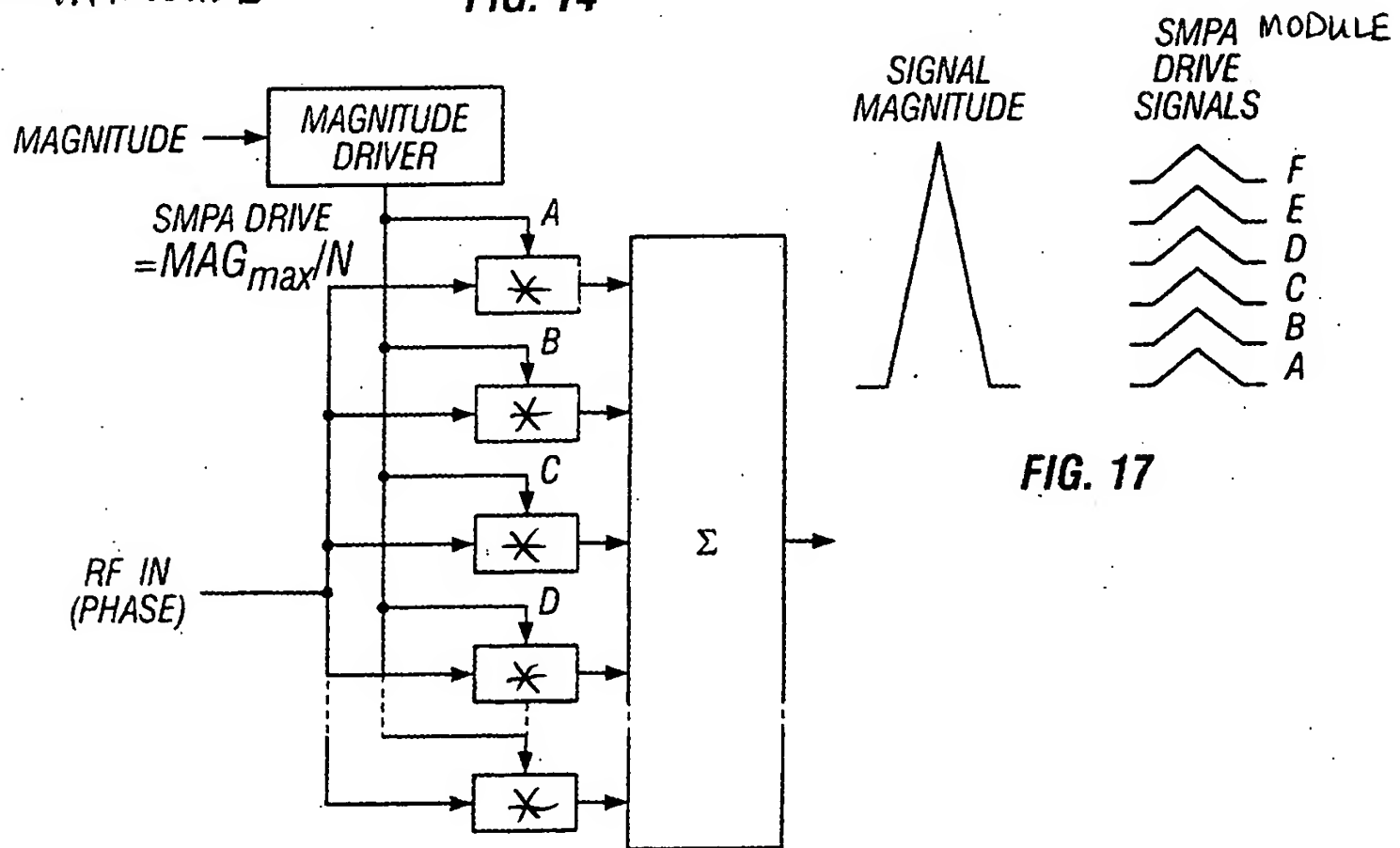


FIG. 16

FIG. 17